

PROJECT DESCRIPTION

Town of Hilton Head Island, S.C. 2005/06 Beach Renourishment Project

Applicant: Town of Hilton Head Island
Agent: Olsen Associates, Inc., Jacksonville, Florida

The proposed project will include the placement of approximately 1.9 million cubic yards of sand along 30,500 feet of Atlantic oceanfront and Calibogue Sound shoreline at Hilton Head Island, South Carolina. Approximately 1.8 million cubic yards (+/- 10 percent) of sand will be placed along 29,000 feet of Atlantic Ocean shoreline between the existing terminal groin at *The Folly* (a small tidal creek between Singleton Beach and Bradley Beach) and Alder Lane in South Forest Beach. This reach of shoreline was originally restored in 1990 (PN: 87-3T-370-P) and renourished in 1997 (PN: 96-1A-038-P) by the Applicant. Approximately 100,000 cubic yards (+/- 10 percent) will be placed along about 1,500 feet of Atlantic/Calibogue Sound shoreline at South Beach. This shoreline was originally restored by the Applicant in 1999 (PN: 97-1A-459-P).

The purpose of the project, which is a component of the Applicant's continued comprehensive beach management program, is to provide beach restoration along eroding section of shoreline sufficient to maintain the island's restored protective and recreational beachfront and natural dune system. Physical monitoring of the island's beachfront, based upon the May 2004 beach survey, indicates that only portions of the 1997 Beach Renourishment Project and 1999 South Beach Beach Fill Project currently require renourishment. Specifically, the shoreline reach between Alder Lane in South Forest Beach and *The Folly* and the western section of the South Beach shoreline have continued to experience sand loss rates equivalent to historical levels. Conversely, the sand loss rates within the limits of the previous projects north of *The Folly* along the Atlantic shorefront and the Port Royal Plantation Port Royal Sound Shoreline, originally restored in 1997, have experienced only modest sand losses since the 1997. Likewise, the eastern section of the South Beach shoreline has been net accretional since the 1999 restoration at that location. A summary of the May 2004 beach conditions is included with this application as **Attachment B**. Only those oceanfront areas with documented requirements for sand renourishment are included in the maintenance project proposed herein.

Along the areas to be renourished, the placed sand will be shaped into the typical construction berm configuration with a crest elevation of +8 ft NGVD and a seaward slope of 1:20 (i.e., 1 vertical unit to 20 horizontal units). Fill berm widths will vary from 120 to 180 ft along the

Atlantic shoreline and from about 50 to 120 feet at South Beach. Similar to past post-nourishment activities, the Applicant will install sand fencing and salt-tolerant vegetation, where necessary, to protect existing dune formations and encourage the additional growth of pioneer dunes and vegetation.

The beach quality sand required for the maintenance project will be excavated from two offshore borrow sites. These sites will be located at Barrett Shoals, offshore of the southern end of the island, and at Joiner Shoals, offshore of the northern end of the island. The sediment conditions within each borrow area have been investigated in detail by the Applicant and are summarized by Olsen Associates, Inc. (2004). This report and all associated geotechnical data and analysis results are provided on CD in PDF format with this application as **Attachment C**. The sand will be excavated by hydraulic cutter-head dredge and pumped through a pipeline from the dredge to the beach. Approximately three-fourths of the sand for the larger project and all of the sand for the smaller project will be excavated from the Barrett Shoals borrow site. The remainder of the sand will be excavated from the Joiner Shoals borrow site. It is estimated that approximately 2.9 million cubic yards of clean, beach compatible sand are available above the -20 ft NGVD elevation in the Barrett Shoal borrow areas and approximately 3.2 million cubic yards are available above the -20 ft NGVD elevation in the Joiner Shoals borrow area. Each area provides a sufficient sand volume to meet the construction requirements along all project reaches with an allowance for overfill, dredge and construction related losses, and other uncertainties.

An additional component of the project will include minor maintenance of portions of the terminal groin located at *The Folly*. The purpose of this rehabilitation is to reduce the loss of sand from the adjacent beach to *The Folly* and prevent flanking of the landward end of that structure during storm events.

The Applicant seeks permission to construct the project anytime throughout the year. This will offer the Applicant an opportunity to consider the operational effects of construction activities upon peak beach use seasons and potentially maximize project construction efficiency and minimize project costs. The Applicant has successfully constructed both the 1990 and 1997 projects during the spring, summer, and fall seasons with no adverse impact to marine turtles. As with prior beach nourishment projects constructed at Hilton Head Island, the Applicant intends to implement a comprehensive Sea Turtle Protection Plan when construction activities occur during sea turtle nesting season. A copy of the proposed Sea Turtle Protection Plan is included with this application as **Attachment D**.

It is noted that an area at the extreme northeast end of Hilton Head Island has been delineated as Critical Habitat for the piping plover (*Charadrius melodus*). This location of the designated area on Hilton Head Island is depicted in **Attachment E**. The proposed activities addressed by the application are not located in or near this designated area and therefore will not adversely impact the habitat.

References:

Olsen Associates, Inc. (2004). "*Hilton Head Island, SC 2005/06 Beach Renourishment Project Offshore Sand Search Investigation*", engineering report prepared for the Town of Hilton Head Island, SC, Olsen Associates, Inc., Jacksonville, FL, July 2004.